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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,055	03/01/2002	Kiam Choo	VERI-002	3261

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William L. Botjer
PO Box 478
Center Moriches, NY 11934

EXAMINER	
NGUYEN, HAI V	
ART UNIT	**PAPER NUMBER**
2142	

DATE MAILED: 04/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/087,055	CHOO, KIAM	
	Examiner	Art Unit	
	Hai V. Nguyen	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 March 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the application filed on 01 March 2002.

2. Claims 1-48 are presented for examination.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 1, 12 recite the limitation "said host receiving a request for said resource from an application running said host's computer" in claims 1, 12. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1-48 are rejected under 35 U.S.C. 102(e) as being anticipated by **Lumelsky** et al. U.S. patent #: **6,516,350 B1**.

8. As to claim 1, Lumelsky teaches substantially the invention as claimed, including a method for serving requests for resources *(content or web objects)* by applications running on a computer *(a server)*, the computer being part of a network of computers, each computer on said network comprising a host program, each said host program *(Service Control Plane)* comprising a symbiont *(an object replica)*, each said symbiont encapsulating one data processing resource, said method comprising the steps of:

a. said host receiving a request for said resource *(content or web object)* from an application running on said host's computer *(server) (the SCP receives stimuli (i.e., application requests) from a plurality of clients desiring to access target multimedia content, col. 5, lines 37-48)*;

b. said host contacting said symbiont that encapsulates said resource *(the SCP coordinates the dynamic placement of replicas of target content across aspect global resources, col. 6, lines 13-24)*; and

c. said symbiont either serving said request, or redirecting it to another replicate of itself, or replicating itself onto said host *(the SCP monitors the availability of the resources, maps the requests to the servers with available resources, predict utilization of the end-resources and if necessary dynamically re-distributes the content, col. 9, lines 1-14; if the local server (671) holds the replica which is requested by the client (601), and the condition of the server (671) is "Green", the service management layer may bind the*

client (601) and the replica on the server (671), establishing the streaming flow (680) between them, col. 11, lines 10-29).

9. As to claim 2, Lumelsky teaches, wherein said host provides information relating to said symbionts available on said network to applications running on said host's computer *(server computer) (Fig. 6, items 625, 656, 682; Fig. 11, storage assignment, memory allocation, CPU Cycle allocation, Bandwidth Reservation).*

10. As to claim 3, Lumelsky teaches, wherein said host provides information relating to said symbionts available on said host's computer to said network *(Fig. 6, items 625, 656, 682; Fig. 11, storage assignment, memory allocation, CPU Cycle allocation, Bandwidth Reservation).*

11. As to claim 4, Lumelsky teaches, wherein various replicates *(object replicas)* of said symbiont is connected together, to support a measure of communication among said replicates *(Fig. 6, items 625, 656, 682; Fig. 11, storage assignment, memory allocation, CPU Cycle allocation, Bandwidth Reservation).*

12. As to claim 5, Lumelsky teaches, wherein said various replicates of said symbiont are connected together in a multiply connected ring *(Figs. 4,5).*

13. As to claim 6, Lumelsky teaches, wherein said step of said symbiont either serving said request, or redirecting it to another replicate of itself, or replicating itself onto said host, said step further comprising the steps of:

a. determining load *(volume of requests or demand)* on said symbiont, if load on said symbiont is less than threshold, Imax, said symbiont serving said request *(Figs. 7a-b; Fig. 9, at T(i) first vertical column)*;

b. determining load on said symbiont, if load on said symbiont is more than its threshold, Imax, and if load on all said connected replicates of said symbiont, is also more than their threshold, t, said symbiont replicating itself on said host *(Fig. 7a-b; Fig. 9, at T(i+1) second vertical column)*;

c. determining load on said symbiont, if load on said symbiont is more than its threshold, Imax, and if said host has been redirected more than a predetermined number of times, said symbiont replicating itself on said host *(Fig. 7a-b; Fig. 9, at T(i+2) third vertical column)*; and

d. determining load on said symbiont, if load on said symbiont is more than its threshold, Imax, and if at least one of said connected replicates of said symbiont, has a load less than their threshold, t, one of said connected replicates with load less than its threshold serving said request. *(Fig. 7a-b; Fig. 9, at T (N) fifth vertical column)*

14. As to claim 7, Lumelsky teaches, wherein said threshold, Imax, of said symbiont, evolves with time according to some probabilistic measure *(Fig. 9)*.

15. As to claim 8, Lumelsky teaches, wherein said threshold, t, of said replicate of said symbiont is less than said threshold, Imax. of said symbiont *(Fig. 9)*.

16. As to claim 9, Lumelsky teaches, wherein said threshold, t, of said replicate of said symbiont, evolves with time according to some probabilistic measure *(Fig. 9)*.

17. As to claim10, Lumelsky teaches, wherein said step of one of said connected replicates with load less than its threshold serving said request, further comprises said replicate with least load serving said request *(Fig. 7a-b; Fig. 9, at T (N) fifth vertical column)*.

18. As to claim 11, Lumelsky teaches, wherein said step of one of said connected replicates with load less than its threshold serving said request, further comprises said replicate closest to said host serving said request *(Fig. 8, local server)*.

19. Claim 12 is corresponding system claim of claim 1; therefore, it is rejected under the same rationale as in claim 1.

20. Claims 13-19 are similar limitations of claims 2-6, 10, 11; therefore, they are rejected under the same rationale as in claims 2-6, 10, 11.

21. As to claim 20, Lumelsky teaches a method for managing hosts and symbionts in a network of computers, each computer on said network comprising a host program, each said host program comprising a symbiont, each said syrnbiont encapsulating one data processing resource, said method comprising the steps of:

a. initializing a set of hosts *(servers)* and symbionts *(object replicas)* on said network *(col. 10, lines 17-44);*

b. adding a new symbiont for an existing resource to said network, whenever there is a need for one *(col. 10, lines 17-44;col. 9, lines 31-39)*;

c. adding a new symbiont for a new resource to said network whenever said new resource is to be added *(col. 10, lines 17-44; col. 9, lines 31-39)*; and

d. deleting said symbiont from said network of computers whenever certain conditions are met *(col. 10, lines 17-44;col. 9, lines 31-39; the SCP also enables returning resources back to the lending servers when the rate of requests decreases, col. 9, lines 1-14)*.

22. Claims 21-24 are similar limitations of claims 2-5; therefore, they are rejected under the same rationale as in claims 2-5

23. As to claim 25, Lumelsky teaches, wherein said initializing step further comprises the steps of:

a. initializing a host on each computer of said network *(col. 9, lines 31-39; col. 10, lines 17-44; col. 11, lines 10-63)*;

b. encapsulating said resources that are to be initialized in one said symbiont each *(col. 9, lines 31-39; col. 10, lines 17-44; col. 11, lines 10-63)*;

c. marking original copy of each of said symbiont encapsulating said resource, as immortal so that they are always present in said network *(Fig. 7a-b, object_ID; col. 6, lines 35-65; col. 9, lines 31-39; col. 10, lines 17-44; col. 11, lines 10-63)*; and

d. initializing said symbionts on computers in said network, wherein said symbiont runs in said host *(col. 9, lines 31-39; col. 10, lines 17-44; col. 11, lines 10-63)*;

24. As to claim 26, Lumelsky teaches, wherein a symbiont run in said host *(Fig. 7a, Object _ID 420 runs on server 1211).*

25. Claims 27-30 have similar limitations of claims 6-9; therefore, they are rejected under the same rationale as in claims 6-9.

26. Claim 31 is similar limitations to claim 25; therefore, it is rejected under the same rationale as in claim 25.

27. As to claim 32, Lumelsky teaches, wherein said step of deleting said symbiont from said network of computers whenever certain conditions are met, further comprises the steps of:

a. said symbionts checking their loads at regular time intervals *(Fig. 9)*; and

b. said symbionts dying if their load is less than a threshold, Imin. *(Fig. 9, no transient replicas)*

28. As to claim 33, Lumelsky teaches, wherein said time intervals evolve with time *(Fig. 9)*.

29. As to claim 34, Lumelsky teaches, wherein said threshold, Imin, evolves with time *(Fig. 9)*.

30. As to claim 35, Lumelsky teaches, wherein said symbionts marked immortal are never deleted from said network *(Fig. 7a, Object_ID)*.

31. Claim 36 is corresponding system claim of claim 20; therefore, it is rejected under the same rationale as in claim 20.

32. Claims 37-42 have similar limitations of claims 21-27; therefore, they are rejected under the same rationale as in claims 21-27.

33. Claims 44-48 have similar limitations of claims 31-35; therefore, they are rejected under the same rationale as in claims 31-35.

34. Further references of interest are cited on Form PTO-892, which is an attachment to this action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai V. Nguyen whose telephone number is 571-272-3901. The examiner can normally be reached on 6:00-3:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Harvey can be reached on 571-272-3896. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hai V. Nguyen
Examiner
Art Unit 2142

BEATRIZ PRIETO
PRIMARY EXAMINER